**Our Project:** [**Social Studies - Tracking Hurricanes**](http://fcit.usf.edu/matrix/lessons/authentic_entry_socialstudies)   
**Grade level: 7th**   
**Pedagogy: Authentic Learning**   
**Differentiation: English Language Learners**

**Objectives**

* Students will be able to identify the stages and categories of storm development.
* Students will understand the factors that lead to the development of a hurricane.
* Students will practice latitude and longitude by plotting different hurricanes on a map.
* Students will determine the effects of a hurricane on the Florida's physical environment and predict effects to industries.

**Maryland State Standards (to be completed, when lesson plan is complete)**

**Standard 3.0** Geography: Students will use geographic concepts and processes to examine the role of culture, technology, and the environment in the location and distribution of human activities and spatial connections throughout time.

**A**. Using Geographic Tools

**1.** Use geographic tools to locate places and describe the human and physical characteristics in the contemporary world

**b.** Use photographs and thematic maps to compare human and physical characteristics of places and regions

**c.** Analyze geographic issues and problems

**B**. Geographic Characteristics of Places and Regions

**1.** Analyze interrelationships among physical and human characteristics that shape the identity of places and regions around the world

**d.** Identify geographic factors that have influenced international relations and economic development in world regions, such as trade, infrastructure, and health issues

**D**. Modifying and Adapting to the Environment  
        **1.** Analyze why and how people in contemporary world regions modify their natural environment and the impact of those modifications  
          
  
  
**ISTE Technololgy Standards**

* **1.** **Creativity and Innovation**
  + Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:

|  |  |
| --- | --- |
|  a. |  apply existing knowledge to generate new ideas, products, or processes. |
|  b. |  create original works as a means of personal or group expression. |
|  c. |  use models and simulations to explore complex systems and issues. |
|  d. |  identify trends and forecast possibilities. |

* + **2.** **Communication and Collaboration**
    - Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:

|  |  |
| --- | --- |
|  a. |  interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media. |
|  b. |  communicate information and ideas effectively to multiple audiences using a variety of media and formats. |
|  c. |  develop cultural understanding and global awareness by engaging with learners of other cultures. |
|  d. |  contribute to project teams to produce original works or solve problems. |

* + - **3.** **Research and Information Fluency**
      * Students apply digital tools to gather, evaluate, and use information. Students:

|  |  |
| --- | --- |
|  a. |  plan strategies to guide inquiry. |
|  b. |  locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media. |
|  c. |  evaluate and select information sources and digital tools based on the appropriateness to specific tasks. |
|  d. |  process data and report results. |

* + - * **4.** **Critical Thinking, Problem Solving, and Decision Making**
        + Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. Students:

|  |  |
| --- | --- |
|  a. |  identify and define authentic problems and significant questions for investigation. |
|  b. |  plan and manage activities to develop a solution or complete a project. |
|  c. |  collect and analyze data to identify solutions and/or make informed decisions. |
|  d. |  use multiple processes and diverse perspectives to explore alternative solutions. |

* + - * + **6.** **Technology Operations and Concepts**

Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:

|  |  |
| --- | --- |
|  a. |  understand and use technology systems. |
|  b. |  select and use applications effectively and productively. |
|  c. |  troubleshoot systems and applications. |
|  d. |  transfer current knowledge to learning of new technologies. |

**NETS Profiles for Technology Literate Students**

Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum.

Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems.

**Materials**

Active Board

Power Point or Slide of Atlantic Map (to plot points) <http://www.nhc.noaa.gov/AT_Track_chart.pdf>

Computers with Internet access - Class is held in the Computer Lab for this lesson

Website Activity <http://deved.meted.ucar.edu/hurrican/strike/>

Work Sheets <http://deved.meted.ucar.edu/hurrican/strike/orig/wkshtall.pdf>

Pre & Post Assessment Online Quiz- <http://teacher.scholastic.com/activities/wwatch/hurricanes/extreme/quiz/index.asp>

**Resources**

**MD State Curriculum** [**http://mdk12.org/instruction/curriculum/social\_studies/standard3/allgradesinfo.html**](http://mdk12.org/instruction/curriculum/social_studies/standard3/allgradesinfo.html)

**Procedure**

Teacher will introduce today’s lesson on understanding hurricanes and introduce

Students will first begin with taking a pre-assessment, Hurricane Quiz, so that the teacher(s) has material to evaluate if the students learned the material after the conclusion of the lesson & the interactive media content.

Students will explore formation and preparation for hurricanes through an online interactive game- Hurricane Strike!

which can be found here: <http://deved.meted.ucar.edu/hurrican/strike/>

Students will work through the week activities on the site.

Students will also complete 1 of the 6 versions of the corresponding activity sheets for the website activity to help guide them through the web-site's material .

Students will then plot the paths of current hurricanes on the Active Board.

Since the website provides a text based version of the interactive portion of the website in Spanish, the ELL students could be exploring the English version of the website, while utilizing the Spanish, text based version of the website via teacher provided handouts.

The class will conclude by taking the post assessment.  Student performance on the preassessment and postassessment will be contrasted to determine the effectiveness of the lesson.

**Pre & Post Assessment** [**http://teacher.scholastic.com/activities/wwatch/hurricanes/extreme/quiz/index.asp**](http://teacher.scholastic.com/activities/wwatch/hurricanes/extreme/quiz/index.asp)  
  
  
Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_                                                             Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Hurricane Quiz

Selected Student Response

Multiple Choice

Place an X next to the best answer.

|  |  |
| --- | --- |
| **1.** | **The following is part of a hurricane:** |
|  | |  |  | | --- | --- | |  | a) the eye | |  | b) feeder bands | |  | c) eye wall | |  | d) all of the above | |
| **2.** | **Feeder bands:** |
|  | |  |  | | --- | --- | |  | a) become storms on their own by feeding off the hurricane | |  | b) originate from inside the hurricane | |  | c) can increase the power of the storm by providing energy | |  | d) guide the clouds towards the center of the storm | |
| **3.** | **What mistake might a family make in creating their supply kit?** |
|  | |  |  | | --- | --- | |  | a) They included too much candy and now their teeth will rot. | |  | b) They included bottled water even though the hurricane will bring tons of rain. | |  | c) They did not include a radio, so they won’t know when to evacuate. | |  | d) They forgot to buy extra batteries to keep the flashlight working. | |
| **4.** | **To increase the storm’s energy, feeder bands must be located over:** |
|  | |  |  | | --- | --- | |  | a) cool water | |  | b) warm water | |  | c) a power plant | |  | d) a swamp | |
| **5.** | **Why do you need to create an emergency plan for your pet?** |
|  | |  |  | | --- | --- | |  | a) Pets get scared in storms. | |  | b) Not all emergency shelters allow animals, so special arrangements need to be made. | |  | c) Pets may hide during a storm. | |  | d) Pets don’t need emergency plans because they can swim. | |
| **6.** | **Why would the lawn furniture belong inside the house during a storm?** |
|  | |  |  | | --- | --- | |  | a) Heavy winds could blow the furniture into people or homes, causing injuries or damage. | |  | b) The lawn chairs can provide more places for the family to sit. | |  | c) The family could take the furniture with them when they evacuate. | |  | d) The furniture will get wet if left outside during a storm. | |
| **7.** | **Feeder bands are:** |
|  | |  |  | | --- | --- | |  | a) a group of clouds that surround the eye of the storm | |  | b) called that because they make a lot of noise | |  | c) located in the center of the storm | |  | d) where most of the rain and thunderstorms of the hurricane occur | |
| **8.** | **Of the following, what should a family include in their kit?** |
|  | |  |  | | --- | --- | |  | a) videos, in case the TV loses reception | |  | b) an umbrella to stay dry during the storm | |  | c) canned food, in case the family cannot leave the house | |  | d) CD entitled *Everyone’s Favorite Hurricane Tunes* | |
| **9.** | **The most violent part of the storm is located in the:** |
|  | |  |  | | --- | --- | |  | a) eye of the storm | |  | b) eye wall | |  | c) outside the hurricane | |  | d) feeder bands | |
| **10.** | **Advanced planning will:** |
|  | |  |  | | --- | --- | |  | a) not matter in the face of a hurricane | |  | b) be a waste of time | |  | c) make handling a disaster easier and less stressful | |  | d) mean hurricanes can’t harm people or property | |

**Differentiation Components**  
Through out this lesson, we have instilled a few components of differentiation.  We have listed the ways in which we can differentiate to appeal to various needs of our students:

English Language Learners

The website can be utilized by Spanish speakers by clicking on the Spanish text version of the website or by using the Spanish text as an assistant to working through the interactive English version

Audio & Visual Learners

The website reads aloud to learners as well as provides images to students to follow text instructions.

Scaffolding Instruction for various learners

The activities through out the website allow for students of different ability levels to work at their own pace and provide a freedom for the teachers to assist the students.

**UDL Checklist**

|  |  |
| --- | --- |
| **Project Reflection Sheet**  How did you use technology to implement the 9 UDL guidelines? Explain in the nine boxes below. |  |
| **I.** [**Provide Multiple Means of Representation:**](http://www.udlcenter.org/aboutudl/udlguidelines/principle1) | **Your notes** |
| **1.**[Provide options for perception](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g1) | This program allows for students to become interactive with understanding hurricanes and preparing for them.  They allow for pictures, moving models and representations.  Students are also able to move through the demonstrations at their own pace. |
| **1.1**[Offer ways of customizing the display of information](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g1) | [Yes, the information is utilized through interactivities](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g1) |
| **1.2**    [Offer alternatives for auditory information](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g1) | [Yes, information that is given via audio is also given via text and graphical represenation](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g1) |
| **1.3**    [Offer alternatives for visual information](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g1) | [Yes, audio supplements the imagery and text](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g1) |
| **2.**[Provide options for language, mathematical expressions, and symbols](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g2) | By utilizing the online activity portal, it provides the students the ability to read a text version in Spanish if they need assistance or they can work interactively to understand the material and become more proficient in english.  The interactive program also allows for students to listen to instructions and content on the website as well. |
| **2.1**    [Clarify vocabulary and symbols](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g2) | [Yes, vocabulary through the utilization of other forms](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g2) |
| **2.2**    [Clarify syntax and structure](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g2) | [No, this is not supported by the lesson](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g2) |
| **2.3**    Support decoding of text, and mathematical notation, and symbols | No, this is not supported by the lesson. |
| **2.4**    [Promote understanding across language](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g2) | [Yes, the “lesson” is represented through other means that are not represented via an English, dogmatic language.  Students do not have to proficient in English nor Spanish to be proficient.](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g2) |
| **2.5**    [Illustrate through multiple media](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g2) |  |
| **3.**[Provide options for comprehension](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g3) | The use of the interactive website and reseach websites allow the students to connect or develope background knowlege on hurricanes.  The worksheets that correspond to the website provides the students a guide to comprehension and understanding of the materail. |
| **3.1**    [Activate or supply background knowledge](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g3) |  |
| **3.2**    [Highlight patterns, critical features, big ideas, and relationships](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g3) |  |
| **3.3**    [Guide information processing, visualization, and manipulation](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g3) |  |
| **3.4**    [Maximize transfer and generalization](http://www.udlcenter.org/aboutudl/udlguidelines/principle1#principle1_g3) |  |
| **II.**[**Provide Multiple Means for Action and Expression:**](http://www.udlcenter.org/aboutudl/udlguidelines/principle2) | **Yes.  While the students are being assessed via various worksheets, they are able to express themselves through map interactivity and various interaction with the website that is simply beyond them providing their text reactions.** |
| **4.**[Provide options for physical action](http://www.udlcenter.org/aboutudl/udlguidelines/principle2#principle2_g4) |  |
| **4.1**    [Vary the methods for response and navigation](http://www.udlcenter.org/aboutudl/udlguidelines/principle2#principle2_g4) |  |
| **4.2**    [Optimize access to tools and assistive technologies](http://www.udlcenter.org/aboutudl/udlguidelines/principle2#principle2_g4) |  |
| **5.**[Provide options for expression and communication](http://www.udlcenter.org/aboutudl/udlguidelines/principle2#principle2_g5) | Students can express themselves via the website, completing the online activity, or by completing the assessment.  Students are not locked into the website and following it to a T.  If they can get the information to complete the assessment, then they are allowed to do so. |
| **5.1**    [Use multiple media for communication](http://www.udlcenter.org/aboutudl/udlguidelines/principle2#principle2_g5) |  |
| **5.2**    [Use multiple tools for construction and composition](http://www.udlcenter.org/aboutudl/udlguidelines/principle2#principle2_g5) |  |
| **5.3**    [Build fluencies with graduated labels of support for practice and performance](http://www.udlcenter.org/aboutudl/udlguidelines/principle2#principle2_g5) |  |
| **6.**[Provide options for executive functions](http://www.udlcenter.org/aboutudl/udlguidelines/principle2#principle2_g6) | The progression of the activities on the website and the corresponding worksheets help students to manage the information they are being provided. |
| **6.1**    [Guide appropriate goal setting](http://www.udlcenter.org/aboutudl/udlguidelines/principle2#principle2_g6) |  |
| **6.2**    [Support planning and strategy development](http://www.udlcenter.org/aboutudl/udlguidelines/principle2#principle2_g6) |  |
| **6.3**    [Facilitate managing information and resources](http://www.udlcenter.org/aboutudl/udlguidelines/principle2#principle2_g6) |  |
| **6.4**    [Enhance capacity for monitoring progress](http://www.udlcenter.org/aboutudl/udlguidelines/principle2#principle2_g6) |  |
| **III.** [**Provide Multiple Means for Engagement:**](http://www.udlcenter.org/aboutudl/udlguidelines/principle3) | **Yes, the students are engaged through interactivity.  This interactivity means interacting via maps, online exercises, like providing what they woud bring on a trip, etc.** |
| **7.**[Provide options for recruiting interest](http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g7) |  |
| **7.1**    [Optimize individual choice and autonomy](http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g7) |  |
| **7.2**    [Optimize relevance, value, and authenticity](http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g7) |  |
| **7.3**    [Minimize threats and distractions](http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g7) |  |
| **8.**[Provide options for sustaining effort and persistence](http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g8) | By using the smart board technology and a map of the Atlantic Region, students will be able to apply what they learned about hurricane tracking on the website to actually plotting the points on a graph of current hurricanes/tropical storms. So they will be able to evaluate their trajectory and impact. |
| **8.1**    [Heighten salience of goals and objectives](http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g8) |  |
| **8.2**    [Vary demands and resources to optimize challenge](http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g8) |  |
| **8.3**    [Foster collaboration and community](http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g8) |  |
| **8.4**    [Increase mastery-oriented feedback](http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g8) |  |
| **9.**[Provide options for self-regulation](http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g9) |  |
| **9.1**    [Promote expectations and beliefs that optimize motivation](http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g9) |  |
| **9.2**    [Facilitate personal coping skills and strategies](http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g9) |  |
| **9.3**    [Develop self-assessment and reflection](http://www.udlcenter.org/aboutudl/udlguidelines/principle3#principle3_g9) |  |
| **How did you integrate technology into the goals, materials, methods, and assessment for this lesson to improve students’ understanding of content?** | **Technology was integrated into the lesson via various ways.  The website supplements the grander lesson through a variety of ways.  Students who are not proficient in English can seek refuge in the English alternatives.  Students are engaged on completion, which relies on various modes beyond following a script.  The assessment is formulated interdependently of the website, so students that are not proficient in the website can still complete the various assessment activities.** |
| **What technology was used? By whom? Why was this appropriate technology to integrate?** | **The Internet, computers, online guided activities, etc.** |